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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/939,784	08/28/2001	Zhengchen Yu	033337-0125	2840

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EXAMINER	
TRAN, DZUNG D	

ART UNIT	PAPER NUMBER
2633	

DATE MAILED: 11/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/939,784	YU ET AL.	
	Examiner	Art Unit	
	Dzung D Tran	2633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08/09/2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-40* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,14-24 and 33-40* is/are rejected.

7)☒ Claim(s) *6-13 & 25-32* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 39 and 40 are rejected under 35 U.S.C. 102(e) as being anticipated by Srivastava et al. US patent no. 6,602,002.

Regarding claim 39, Srivastava discloses a combiner circuit for combining wavelength channels comprising: a first combiner unit (WGR1 of figure 2) for combining a first plurality of said wavelength channels (λ1 to λ60) to generate a first combined set of wavelength channels; a second combiner unit (WGR3 of figure 2) for combining a second plurality of said wavelength channels (λ61 to λ100) which are outside the band of said first plurality to generate a second combined set of wavelength channels; and an interleaver (210 of figure 2) for receiving and combining said first and second combined sets of wavelength channels to output a third combined set of wavelength channels (col. 3, lines 17-48).

Regarding claim 40, Srivastava further discloses the first and second combiner units are AWG (WGR1, WGR3 of figure 2).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-5, 14-24 and 33-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Srivastava et al. US patent no. 6,602,002 in view of Kobayashi US patent no. 6,172,782.

Regarding claims 1 and 20, Srivastava discloses an optical network comprising:

a plurality of optical transmitters (col. 3, line 19), each optical transmitter generating a data signal sent over a respective one of a plurality of signal channels (λ1 to λ100), the plurality of signal channels being divided into a number of sub-bands (col. 2, lines 46-52) where each sub-band includes at least two signal channels (e.g. C-band sub-bands having 60 channels, see figure 2, col.3, lines 20-21)). Srivastava differs from claim 1 of the present invention in that he does not disclose a plurality of substitute signal transmitters, the number of substitute signal transmitters being equal to the number of sub-bands, each

substitute signal transmitter generating a substitute signal which provides loading in a corresponding sub-band and a combining circuit which combines the data signals output from the plurality of optical transmitters and the substitute signals output from the plurality of substitute signal transmitters into a WDM signal and an optical transmission fiber which receives the WDM signal from the combining circuit. Kobayashi discloses an optical apparatus having a plurality of optical transmitters (12 of figure 1, same as a group of sub-bands transmitters) and a substitute signal transmitter (23 of figure 1) generating a substitute signal which provides loading in a corresponding sub-band and a combining circuit (15 of figure 1) which combines the data signals output from the plurality of optical transmitters and the substitute signals output from the plurality of substitute signal transmitters into a WDM signal and an optical transmission fiber (8 of figure 1) which receives the WDM signal from the combining circuit. At the time of the invention was made, it would have been obvious to include the teaching of Kobayashi in the system of Srivastava. One of ordinary skill in the art would have been motivated to do this in order to obtain a backup system for the transmitters (in case of components failure), thus it increases the stability of the system.

Regarding claims 2 and 21, Kobayashi discloses a monitoring circuit (17 of figure 1) which detects the wavelengths and power levels of each data signal in the WDM signal (col. 3, lines 34-41).

Regarding claims 3 and 22, Kobayashi discloses a control circuit (22 of figure 1) for detecting the trouble wavelength (e.g. detect when signal of wavelength cut off, see col. 4, line 64 to col. 5, line 13).

Regarding claims 4, 5, 23 and 24, Kobayashi further discloses a control circuit (22 of figure 1) controls the change-over switch so that the backup light source wavelength is substantially coincident with the wavelength of the optical signal to which the trouble is detected (col. 5, lines 3-52, col. 6, lines 42-48).

Regarding claims 14, 18, 33 and 37, Kobayashi further discloses the system with 100 channels and 4 sub-bands (figure 1, col. 3, lines 17-48). Furthermore, whether the number of optical transmitters is at least 128 or the number of sub-bands is no more than 48 is obviously an engineer design choice.

Regarding claims 19 and 38, whether to have a laser having a frequency which is approximately halfway between a shortest frequency and a largest frequency in the corresponding sub-band is obviously an engineer design choice.

Regarding claims 15-17 and 34-36, Srivastava further discloses an attenuator 256, thus it would have been obvious to impose the attenuator 256,in the system of Srivastava and Kobayashi, between the substitute transmitter and the combining circuit for adjusting the output power of the substitute transmitter.

5. Claims 6-13, 25-32 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

6. Applicant's arguments filed 08/09/2004 have been fully considered but they are not persuasive.

Regarding claims 39 and 40, applicants argued that the present invention describes a new use of the interleaver not disclosed or taught by Srivastava, which is the use of an interleaver to combined output from combiners covering different wavelengths ranges and has lower loss than Srivastava. Examiner respectfully submits that Srivastava discloses an interleaver (210 of figure 2) for receiving and combining said first and second combined sets of wavelength channels to output a third combined set of wavelength channels (col. 3, lines 17-48). Although the claims are interpreted in light of the specification, the limitations such as "low loss interleaver (e.g. insertion loss of the interleaver can be less than 2 dB)" from the specification are not read into the claims.

With regard to the 103 rejection, applicants argued that Kobayashi discloses a tunable transmitter as a backup transmitter and is used to transmit signals that would have been transmitted by the signal transmitter in case of a failure. Kobayashi does not teach the use of substitute transmitters that generate a substitute signal which provides loading in a corresponding sub-band. However, it is notoriously known in the art that when a transmitter transmits a backup signal (or substitute signal), it also provides loading.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dzung Tran whose telephone number is (571) 272-3025.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

Supervisor, Jason Chan, can be reached on (571) 272-3022.

The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

DT

11/12/2004

M. R. Sedighian

M. R. SEDIGHIAN
PRIMARY EXAMINER